

North America Smart Mining Market Forecast to 2030 - Regional Analysis - by Component (Automated Equipment, Hardware Component, Software Solution, and Services) and Mining Type (Underground Mining and Surface Mining)

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Abstracts

The North America smart mining market was valued at US\$ 3,216.71 million in 2022 and is expected to reach US\$ 6,706.00 million by 2030; it is estimated to register a CAGR of 9.6% from 2022 to 2030.

Growing Need to Keep Workforce Safe Fuels North America Smart Mining Market

The mining area is one of the hazardous places for people to work, and the security of the workers is a crucial issue worldwide. For example, when mines fail, both workers and those around the mines are affected or even lose their lives. For instance, according to the Mine Safety and Health Administration, seven miners died in the first six weeks of 2023 due to an electrocution incident. An overhead power line came in contact with two truck drivers at the mining site. The drivers exited the cabs of their trucks and came in contact with electrical energy. Workers conducting manual readings in remote mining sites are at risk of harming their lives. Smart mining technologies play a crucial role in enhancing workers' safety. Implementing automated mobile assets such as vehicles, wireless gadgets, remote sensors, and real-time data analytics in mining sites reduces the need for an on-site workforce. Automated mobile assets detect gas leaks, monitor ground stability, and assess real-time equipment health. This data helps miners and operators to address safety issues, preventing accidents and fatalities proactively. Remote sensors and real-time data analytics provide a complete view of the mining environment, which, in turn, increases the protection level of the workers. Additionally, automation systems improve safety by reducing the need for workers to be

in high-risk areas. Predictive analysis and observations performed by operational intelligence (OI) solutions enable mining operators to anticipate and avoid dangerous accidents. Workforce monitoring, with the help of wireless wearable devices, often facilitates operators to efficiently organize their staff and keep workers away from the risky areas of the mining site.

Smart mining technologies help minimize the threat and damage caused during mining operations. IoT is utilized in mining to add sensors to mining equipment to communicate and monitor the data in real time and keep the workers safer. Sensors can also be attached to the workers' clothing to monitor their health by tracking and transmitting data about their physical health and condition. They can also raise alerts at the time of accidents. Major global mining companies such as Rio Tinto and Boliden are integrating IoT to remotely monitor and control mining operations. These technologies help Boliden mining engineers to remotely and safely operate the machinery from a control room. Smart mining supports miners to easily and safely handle heavy machines, equipment, vehicles, and devices used in a mine site. Furthermore, the strong commitment to protecting its workforce and adhering to strict safety regulations in the mining industry has accelerated the adoption of smart mining solutions, driving the market.

North America Smart Mining Market Overview

The market in North America is segmented into the US, Canada, and Mexico. Across North America, technological advancements have led to a highly competitive market. North America has several economically strong countries which are ready to adopt technological advancements. Companies continuously improve their overall business processes to fulfill customers' demand for high-quality products and services.

Growing technological investments, early adoption of smart mining solutions, and rising demand for mine projects, are driving the market in the region. The discovery of shale formations and global dependence on oil and gas resources have paced up mining activities, particularly in the oil & gas sector. Proper infrastructure planning is essential to distribute such supplies such as oil and gas effectively with the changing supply system. A strong demand for precious metals has pushed North America's metals and mining industries to explore, develop, and grow. Recent technological breakthroughs have helped develop new smart mining systems, making overall processes more effective and significantly improving accuracy in various services and solutions. A series of mergers and acquisitions took place in the US to seize this opportunity.

Canada is taking initiatives regarding smart mining. Canada's economy heavily relies on

resource production as the world's second-largest country. Canada's investment in modern mining technology has many advantages, including reduced operational costs, improved workflow and decision-making, increased accuracy in drill and blast mining, predictive equipment maintenance, improved recruiting and employee retention, better worker safety.

North America Smart Mining Market Revenue and Forecast to 2030 (US\$ Million)

North America Smart Mining Market Segmentation

The North America smart mining market is segmented based on component, mining type, and country.

Based on component, the North America smart mining market is segmented into automated equipment, hardware component, software solution, and services. The automated equipment segment held the largest North America smart mining market share in 2022. The automated segment is further subsegmented into load haul dump, robotic truck, driller & breaker, excavator, and other automated equipment. The hardware component is further subsegmented into RFID tags, sensors, intelligent system, and others. The software solutions is further subsegmented into logistics software and solutions, data & operation management software and solutions, safety & security systems, connectivity solutions, analytics solutions, remote management solutions, and asset management solutions.

In terms of mining type, the North America smart mining market is bifurcated into underground mining and surface mining. The surface mining segment held a larger North America smart mining market share in 2022.

Based on country, the North America smart mining market is categorized into the US, Canada, and Mexico. The US dominated the North America smart mining market in 2022.

ABB Ltd, Alastri, Caterpillar Inc, Hexagon AB, Hitachi Ltd, MineSense, Rockwell Automation Inc, SAP SE, and Trimble Inc are some of the leading companies operating in the North America smart mining market.

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